Amendments to the Claims

1. (Original) A pair of probes for detecting and quantifying protein nuclear transport induced by action of a bioactive substance, comprising

Probe I in which a protein whose nuclear transport is to be detected or quantified is connected to an N-terminal end or a C-terminal end of a fusion protein [intein-C/reporter protein-C] wherein at least a C-terminal side polypeptide of an intein and a C-terminal side polypeptide of a reporter protein are connected in this order, and

Probe II in which a nuclear localization signal is connected to an N-terminal end or a C-terminal end of a fusion protein [reporter protein-N/intein-N] wherein at least the remaining N-terminal side polypeptide of the reporter protein and the remaining N-terminal side polypeptide of the intein are connected in this order.

2. (Original) A pair of probes for detecting and quantifying protein nuclear transport induced by action of a bioactive substance, comprising

Probe I in which a protein whose nuclear transport is to be detected or quantified is connected to an N-terminal end or a C-terminal end of a fusion protein [reporter protein-N/intein-N] wherein at least a N-terminal side polypeptide of a reporter protein and a N-terminal side polypeptide of an intein are connected in this order, and

Probe II in which a nuclear localization signal is connected to an N-terminal end or a C-terminal end of a fusion protein [intein-C/reporter protein-C] wherein at least the remaining C-terminal side polypeptide of the intein and the remaining C-terminal side polypeptide of the reporter protein are connected in this order.

3. (Original) The pair of probes of claim 1 or 2, wherein the intein is a DnaE intein derived from blue-green algae.

4. (Original) The pair of probes of claim 1 or 2, wherein the reporter protein is luciferase.

5. (Currently amended) A method for detecting and quantifying protein nuclear transport induced by action of a bioactive substance, which comprises

making Probe I of the pair of probes of ~~any of claims 1 to 4~~ claim 1 or 2 and the bioactive substance coexist in the cytosol,

localizing Probe II in the nucleus, and

measuring a signal of the reporter protein within the nucleus.

6. (Currently amended) The detecting and quantifying method of claim 5, wherein polynucleotides expressing the pair of probes ~~of any of claims 1 to 4~~ are introduced into a cell thereby making Probe I and the bioactive substance coexist in the cytosol and localizing Probe II in the nucleus.

7. (Currently amended) The detecting and quantifying method of claim 5, wherein polynucleotides expressing the pair of probes ~~of any of claims 1 to 4~~ are introduced into a non-human animal multipotent cell and the cell is subjected to ontogenesis thereby making Probe I and the bioactive substance coexist in the cytosol and localizing Probe II in the nucleus in all cells of the animal or its progeny.

8. (Currently amended) A method for screening a protein nuclear transport-inducing substance, which comprises

introducing Probe I of the pair of probes of ~~any of claims 1 to 4~~ claim 1 or 2 into the cytosol,

localizing Probe II in the nucleus,

introducing a nuclear transport-inducing candidate substance into the cytosol, and

measuring a signal of the reporter protein in the nucleus.

9. (Currently amended) A method for screening a protein nuclear transport-inhibiting substance, which comprises

introducing Probe I of the pair of probes of ~~any of claims 1 to 4~~ claim 1 or 2 into the cytosol,

localizing Probe II in the nucleus,

introducing a nuclear transport-inhibiting candidate substance into the cytosol,

further introducing a nuclear transport-inducing substance into the cytosol,

measuring a signal of the reporter protein in the nucleus, and

comparing the signal with a signal of the reporter protein obtained by introducing only the protein nuclear transport-inducing substance into the cytosol.

10. (Currently amended) The screening method of claim 8 ~~or 9~~, wherein polynucleotides expressing the pair of probes ~~of any of claims 1 to 4~~ are introduced into the cell thereby introducing Probe I into the cytosol and localizing Probe II in the nucleus.

11. (Currently amended) The screening method of claim 8 ~~or 9~~, wherein polynucleotides expressing the pair of probes ~~of any of claims 1 to 4~~ are introduced into a non-human animal multipotent cell and the cell is subjected to ontogenesis thereby introducing Probe I in the cytosol and localizing Probe II in the nucleus in all cells of the animal or its progeny.

12. (New) The screening method of claim 9, wherein polynucleotides expressing the pair of probes are introduced into the cell thereby introducing Probe I into the cytosol and localizing Probe II in the nucleus.

13. (New) The screening method of claim 9, wherein polynucleotides expressing the pair of probes are introduced into a non-human animal multipotent cell and the cell is subjected to ontogenesis thereby introducing Probe I in the cytosol and localizing Probe II in the nucleus in all cells of the animal or its progeny.